

Remark

Applicants respectfully request reconsideration of this application as amended. No claims have been amended. No claims have been canceled. Therefore, claims 18-45 are now presented for examination.

35 U.S.C. §103 Rejection,***Lundqvist***

The Examiner has rejected claims 18-20 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Lundqvist, WO 99/49691 ("Lundqvist"). The Examiner's Response to Arguments make several key points about Lundqvist which are addressed in turn.

1) "Lundqvist discloses that location can be on the mobile station or in the base station, thereby he discloses both methods of location finding." Page 13, line 13 suggests that the positioning signal may be sent uplink or downlink. At page 6, line 24, it is presumed that the positioning signal is transmitted uplink. "How to convert the described method to the downlink case will, however, be described in short as well.". This "how to convert" is described at page 13, lines 12 et seq.

There is however, no discussion or suggestion of using both uplink and downlink in a single system. They are both described but as alternatives, not a combination. Page 13 describes the downlink versions as modifications to the uplink examples and does not suggest that they are additions. The Examiner would seem to suggest that it would be obvious to combine uplink and downlink position signals in a single Lundqvist system. The motivation is to boost reliability.

Applicants submit that combining uplink and downlink position signals is neither taught nor suggested by any of the references and instead that this suggestion comes only from impermissible hindsight. The idea of a reliability motivation is not supported by the record and reliability is not necessarily achieved by the combination.

2) "Lundqvist discloses using the using the same base stations for both uplink and downlink." Lundqvist shows a single mobile position center 111 that, in Figure 1b, issues orders 160 to other base stations 158 and receives measurement results 162 back. It reports an estimate on line 156. However, in Lundqvist, this can only be used for uplink position signals.

On page 5, line 27- page 6, line 13, downlink signals must be measured by the mobile station, not base stations as shown in Figure 1b. At page 6, line 23, the drawings are based on the presumption that the positioning signal is transmitted on the uplink. Starting at page 13, lines 12 et seq. when downlink positioning signals are discussed, there is no mention of where the mobile position center or position signal scanners may be. (Note that the last paragraph of page 14 refers to when the mobile station sends the positioning pulse.

Applicants accordingly submit that there is no suggestion of using the same measurement units for both uplink and downlink. On the contrary, the approaches described in Lundqvist for downlink location would seem to require hardware in the mobile station separate and apart from the hardware in the base stations.

35 U.S.C. §103 Rejection,***Fox in view of Morris***

The Examiner has rejected claims 31-32 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Fox in view of Morris, U.S. Patent No. 6,314,535 ("Morris"). Fox explains that uplink and downlink location services are known in the background section. Most of the Detailed Description is directed to uplink systems (See e.g. col. 3, line 49) as shown in Figure 2 (col. 4, line 29). Near the end of the Detailed Description, downlink systems are described with reference to the hardware of Figure 7 (See e.g. Col. 9, line 1). Applicants are unable to find any suggestion that one system perform both uplink and downlink location services. The specification states that the described algorithms may be used in both modes but not necessarily in the same hardware or system. The use of a different Figure suggests that these are alternatives.

Claim 31 recites, "at least three measurement units, having an uplink mode and a downlink mode." Applicants find no suggestion that any measurement units in Fox have both an uplink and a downlink mode. Claim 31 further recites details about the measurement units and their interactions with an uplink processor and a downlink processor. Fox does not describe any device which interacts with both an uplink processor and a downlink processor.

Morris describes an FEC processor that operates on uplink and downlink signals but does not suggest that measurement units for determining the location of a mobile device operate in both an uplink and a downlink mode. While uplink and downlink traffic is contemplated in most wireless communication systems, uplink and downlink

location services are typically seen as alternatives. The present invention combines the two former alternatives, obtaining the benefits spelled out in the detailed description.

Conclusion

All of the remaining rejections rely on either Lundqvist or the Fox, Morris combination. Accordingly, these rejections are traversed for at least the reasons provided above. Accordingly, Applicants respectfully submit that the rejections of all claims have been overcome by the remark, and that the claims are now in condition for allowance. Accordingly, Applicants respectfully request the rejections be withdrawn and the claims be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

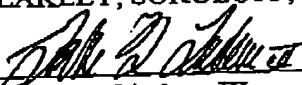
Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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Date: 3/24/15


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